

The U.S. Army Corps of Engineers' Guidance for Compensatory Mitigation and Mitigation Banking in the Omaha District



Karen Lawrence coordinated in consultation with the following: Dr. Robert Brumbaugh, Mike Gilbert, Cheryl Goldsberry, Dave LaGrone, Nebraska Mitigation Review Team, Omaha District's field office personnel, Mr. Jack Chowning, and many others

**The U.S. Army Corps of Engineers’
Guidance for
Wetland and Stream Mitigation/Banks in the Omaha District**

TABLE OF CONTENTS

Part A: Introduction

I. Purpose and Scope	3
II. Policy Consideration	3
III. Applicable Environmental Laws and Regulations	3
IV. Other Procedures	4

Part B: Mitigation (All types) of Aquatic Resources

I. Goals and Principles	5
II. Evaluating Protocol	6
a. General Considerations	6
b. Site Considerations.....	6
c. Evaluation Criteria	7
d. Technical Considerations	7
e. Other.....	8
III. Success Criteria/Assessment	9
a. Routine Method.....	9
b. Comprehensive Method	9
c. Minimum Evaluation Criteria	9
IV. Ratios.....	10
V. Monitoring and Reporting.....	10

Part C: Mitigation Banking

I. Role of Sponsor and Mitigation Banking Review Team	12
a. Sponsor.....	12
b. Mitigation Banking Review Team.....	12
II. Implementation Procedures	12
III. Components.....	13
a. Prospectus.....	13
b. Instrument.....	14
c. Monitoring and Reporting (SEE ABOVE).....	17
d. Bank Operational Life	17

e. Protection / Long-Term Management.....	18
IV. Credit and Accounting	18
a. Credits	18
b. Credit Certification.....	18
c. Minimum Threshold Credit Ratios	19
V. Mitigation Bank Credit Sales	20
VI. Transfer Bank Assets	20
VII. Dispute Resolution	21
Part D: Applicable Literature.....	22

Appendices:

A - Definitions	
1. General Terms	A1
2. Mitigation Banking Terms	A6
B - Mitigation Checklist and Supplement	B1
C - IWI maps (watershed)	C1
1- Colorado.....	C1
2- Montana	C2
3- Nebraska	C3
4- North Dakota	C4
5- South Dakota	C5
6- Wyoming.....	C6
D - Chronology of Mitigation Banking Planning and Design	D1
E - Outline of Prospectus	E1
F - Outline of Instrument.....	F1
G - Outline of Monitoring Report	G1
H - Example of Mitigation Bank Agreement	H1
I - Easement and Restriction Examples.....	I1
1 - Conservation Easement for Mitigation Bank - template.....	I1
2 - Deed Restriction - template	I7
J - Floristic Quality Index.....	J1

Omaha District Guidance for Wetland and Stream Mitigation/Banking

PART A: INTRODUCTION

I. PURPOSE AND SCOPE

The purpose of this document is to provide Omaha District guidance for wetland and stream mitigation and mitigation banking. This guidance was created to better assist the Omaha District regulatory staff, applicants or potential bank sponsors, and other interested parties in the mitigation/banking process to reach the goals of Section 404 of the Clean Water Act.

Included are the guidelines for establishing mitigation and for establishing, owning and operating mitigation banks (Part C). This document further sets out the guidelines for authorizing applicants (e.g., individuals, corporations, units of government) to withdraw credits from a mitigation bank to offset unavoidable wetland impacts that would result from the applicant's proposed activity. Also included are some attachments that serve as a template or examples to further assist in the development of a mitigation bank.

II. POLICY CONSIDERATION

The Omaha District's intent is for this guidance to be applied to all mitigation and mitigation banks proposed on or after the effective date of this guidance and to those in early stages of development. Any permit or mitigation bank instrument that has already been approved and signed will remain intact. Because of the nature of umbrella agreements (mitigation banking term), discretion of the local Mitigation Banking Review Team (MBRT) will determine if modifications need to be made.

Nothing in this document should be interpreted as a promise or guarantee that a project that satisfies the guidance within this document will be assured of a permit. The District Engineer (DE) has a responsibility to consider each project on a case-by-case basis. Also, this document does not change any requirements that may be required in the Section 404(b)(1) guidelines or any other applicable documents.

III. APPLICABLE ENVIRONMENTAL LAWS AND REGULATIONS

This guidance is established in accordance with the following statutes, regulations, and policies. It is intended to clarify existing policies, not to establish new requirements. Projects deemed appropriate for mitigation must demonstrate full compliance with existing Federal, State and Tribal statutes and regulations as well as consistency with applicable policies, including, but not limited to:

- Clean Water Act {33 U.S.C.1251 et seq.}, Section 404 and Section 401.
- National Environmental Policy Act {42 U.S.C. 4321 et seq.} and implementing regulations.

- The Fish and Wildlife Coordination Act {16 U.S.C. 661-666 (c)}.
- The U.S. Fish and Wildlife Service Mitigation Policy (January 23, 1981).
- The Rivers and Harbors Act of 1899 {33 U.S.C. 403}.
- Section 404(b)(1) Guidelines {40 C.F.R., Part 230}; including interpretations of the Guidelines in the Memorandum of Agreement between EPA and the Department of the Army Concerning the Determination of Mitigation under the Clean Water Act Section 404(b)(1) Guidelines {February 6, 1990}.
- Federal Permit Regulations {33 C.F.R., Part 320-330} including interpretive guidance provided by the U.S. Army Corps of Engineers.
- State Water Quality Certification (Section 401).
- Endangered Species Act, as amended {16 U.S.C. 1531-1543}.
- Federal Agriculture Improvement and Reform Act of 1996 {7 U.S.C. 7201}.
- National Environmental Policy Act {16 U.S.C. 470 et seq.}.
- Federal Guidance for the Establishment, Use and Operation of Mitigation Banks, (28 December, 1995.).
- Title XII of the Food Security Act of 1985
- Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 as amended (49 CFR Part 24)
- A Corps of Engineers Memorandum - Regulatory Guidance Letter 93-2 (August 23, 1993)
- A Corps of Engineers Memorandum - Regulatory Guidance Letter 02-2 (December 24, 2002)
- Federal Guidance on the Use of In-Lieu-Fee arrangements for Compensatory Mitigation Under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act; 7 November 2000.
- Federal Guidance on the Use of the TEA-21 Preference for Mitigation Banking to fulfill mitigation requirements under Section 404 of the Clean Water Act; 11 July 2003

IV. OTHER PROCEDURES

This guidance may be subject to change subsequent to the receipt of additional national guidance on this issue. Subsequent guidance related to the development and operation of mitigation banks will be issued as the need arises.

Within 2-3 years of issuance, the district coordinator and state program managers will review this guidance for adequacy, applicability and/or acceptability. The district coordinator will consider any proposed modification, additions or deletions to this guidance, and upon consensus, make necessary changes. Thereafter, review will take place at a minimum of every 3 years.

NOTE: "Since the Corps is striving towards a watershed approach in its mitigation "requirements", the Omaha District will be utilizing the 8-digit Hydrologic Unit Classification (HUC).

PART B: MITIGATION (All types of aquatic resources)

I. GOALS AND PRINCIPLES

THE MITIGATION SHOULD LAST AS LONG AS THE IMPACTS. The goal of any mitigation is to replace physical, chemical, and biological functions of Waters of the United States by providing compensation of unavoidable impacts due to regulated activities. Compensatory mitigation will be considered after all appropriate and practicable avoidance and minimization has been achieved. Mitigation can be achieved through restoration, establishment, enhancement or protection/maintenance.

Wetland functions include, but are not limited to, the following: surface water storage; groundwater recharge/discharge; flood flow attenuation; fish/shellfish habitat; sediment/toxicant retention; nutrient removal; production export; sediment/shoreline stabilization; wildlife habitat; recreation; educational / scientific assessment; uniqueness/heritage; and visual quality/aesthetics.

Stream functions include, but are not limited to, the following: fish/shellfish/aquatic invertebrates habitat; wildlife/migratory bird habitat; recreation; educational scientific value; visual quality/aesthetics; water supply; transportation of sediment load/organic debris of the watershed; watershed health/diversity; and passage of water flows.

IT IS CRITICAL THAT ALL SUCCESS CRITERIA BE SUSTAINABLE. The goal of any mitigation is to successfully meet, record and convey the objectives of the success criteria identified within the permit or banking instrument. Structural goals should include, but are not limited to the following: the size of the proposed wetland or stream reach, its location in the landscape and the upland buffer or adjacent habitat areas; acreage figures for each cover type; linear foot figures for each stream cover type; and the projected hydrologic regime including hydroperiod and water depths. Consideration should be given to the aquatic health of the entire watershed.

Functional goals should have the following characteristics: Specific identified compatible functions; functions expressed as measurable units (e.g. water storage) and their degree of functionality in order to re-establish at the mitigation site equal or greater levels of function than found at the original site prior to impacts, and the appropriate actions/structures to achieve each function listed as elements in the site plan. (Also see Appendix B for Checklist and Supplement).

The following Corps of Engineers Environmental Operating Principles should guide mitigation project design. (www.hq.usace.army.mil/cepa/envprinciples.htm)

1. Strive to achieve environmental sustainability. An environment maintained in a healthy, diverse and sustainable condition is necessary to support life.
2. Recognize the interdependence of life and the physical environment.
3. Seek development activities and natural systems by designing economic and environmental solutions that support and reinforce one another.
4. Seek solutions that promote human health and welfare and the continued viability of natural systems.
5. Seek ways and means to assess and mitigate cumulative impacts to the environment; bring systems approaches to the full cycle of our processes and work.

6. Build and share an integrated scientific, economic, and social knowledge base that supports a greater understanding of the environment and impacts of our work.
7. Respect the views of individuals and groups interested in Corps activities, listen to them actively, and learn from their perspective in the search to find innovative win-win solutions to the nation's problems that also protect and enhance the environment.

In addition to these principles, the CEQ (1993) provides the following principles:

1. Take an ecosystem view. (For Watershed maps, see Appendix C)
2. Protect communities and ecosystems.
3. Minimize fragmentation. Promote the natural pattern and connectivity of habitats.
4. Promote native species. Avoid introducing non-native species (or invasive species).
5. Protect rare and ecologically important species.
6. Protect unique or sensitive environments.
7. Maintain or mimic natural ecosystems process.
8. Maintain or mimic naturally occurring structural diversity.
9. Protect genetic diversity.
10. Restore ecosystems, communities, and species.
11. Monitor for biodiversity impacts.
12. Acknowledge uncertainty.
13. Be flexible.

II. EVALUATING PROTOCOL

There are several factors that need to be addressed to determine if the proposed mitigation is adequately compensating for unavoidable impacts to Waters of the US while maintaining the 'No Net Loss Policy' of the Federal Government.

A. GENERAL CONSIDERATIONS (Based on National Research Council's Mitigation Guidelines)

1. Restoration will be the first option because the 'likelihood of success' is greater with restoration sites (Federal Register 60:58605 Nov, 28, 2002). As part of the restoration process, hydrological conditions should also mimic natural variation.
2. Should not have any over engineered structures.
3. Even degraded or impaired sites can be optimized through mitigation, which can improve the localized landscape.
4. Evaluate the overall health of the watershed.

B. SITE CONSIDERATION

1. Will the site possess the physical, chemical, and biological characteristics to establish a functioning wetland or stream?
2. Will the site possess adequate water? Make sure the site can provide enough water within the geomorphic setting. For example, will there be enough ground water available or rainfall to support the necessary vegetation and soil characteristics? Site(s) should be able to demonstrate the adequacy of their water supply from both the legal and physical perspectives.

3. Will the site possess adequate functions to replace functions that are to be lost? For example in-kind mitigation, stream mitigation should generally be performed on a stream system with the same habitat as the impacted stream, etc.
4. Will the site possess adequate protection from development?
5. Will off-site mitigation (including banks) benefit the watershed more than on-site?

C. EVALUATION CRITERIA

1. Provide the baseline conditions for the proposed project area. This would be a delineation (using the 1987 Corps manual) and assessment of aquatic resources present at the proposed project site before any impacts occur.
2. Quantify the impacts of the proposed project on waters of the US. Include the amount of wetland or stream area filled (square feet or acres), the amount of fill used (cubic yards), and length of stream affected (linear feet). Explain how the proposed project will change the site.
3. Describe how the proposed compensatory mitigation plan will adequately offset any adverse impacts of the proposed project by comparing the baseline assessment (#1 above) and the impact assessment (#2 above).

D. TECHNICAL CONSIDERATIONS

Mitigation should be planned, designed, and constructed to be self-sustaining over time. Though this may not always be possible, functioning self-sustaining wetlands/streams are the ultimate goal.

1. Is hydrology available or could it be within reasonable measures? Are water rights an issue?

Although each site should be selected and managed to utilize the natural water storage functions of wetlands and the natural functions of stream systems, storm water retention should not be the primary purpose.

2. Are ecologically significant sites (aquatic, upland, cultural or T & E species habitat, etc.) going to be negatively impacted? (No ecologically significant site should be permanently or adversely affected by the construction or restoration work.)
3. Are there adequate buffer areas either available already or as part of the mitigation?
 - a. For wetlands: vegetated buffer should be at a minimum 50 feet [15.24 meters] wide and continuous around the perimeter of the wetland.
 - b. For streams: The vegetated buffer will usually be 25-50 feet wide [7.62 -15.24 meters] on each side of the stream, but the DE may require slightly wider vegetated buffers to address documented water quality or habitat loss concerns. When using functional assessments for riparian areas, the Project Manager will use Table 1 below to determine recommended ranges of buffer widths or apply a 3 times the bank height approach.

Table 1: General Riparian Buffer Strips width Guidelines

From ERDC TN-EMRRP-SR-24 Design Recommendations for Riparian Corridors and Vegetated Buffer Strips.

Functions	Description	Recommended width
Water Quality Protection	Buffers, especially dense grassy or herbaceous buffers on gradual slopes, intercept overland runoff, trap sediments, remove pollutants, promote ground water recharge. For low to moderate slopes, most filtering occurs within the first 10 meters, but greater widths are necessary for steeper slopes, buffers comprised of mainly shrubs and trees, where soils have low permeability, or where NPSP loads are particularly high.	5 to 30 meters [16.4 to 98.4 ft]
Riparian Habitat	Buffers, particularly diverse stands of shrubs and trees, provide food and shelter for a wide variety of riparian and aquatic wildlife.	30 to 500+ meters [98.4 to 1640.4ft]
Stream Stabilization	Riparian vegetation moderates soil moisture conditions in stream banks, and roots provide tensile strength to the soil matrix, enhancing bank stability. Good erosion control may only require that the width of the bank be protected, unless there is active bank erosion, which will require a wider buffer. Excessive bank erosion may require additional bio-engineering techniques (see Allen and Leach 1997)*	10 to 20 meters [32.8 to 65.6 ft]
Flood Attenuation	Riparian buffers promote floodplain storage due to backwater effects; they intercept overland flow and increase travel time, resulting in reduced flood peaks.	20 to 150 meters [65.5 to 492.1 ft]
Detrital Input	Leaves, twigs and branches that fall from riparian forest canopies into the stream are an important source of nutrients and habitat.	3 to 10 meters [9.8 to 32.8 ft]

* Or soil bio-engineering techniques, depending upon the site.

E. OTHER

1. Mitigation plans will be provided to other identified agencies for all standard permit actions. If the completed plan is not available during the public notice period, then the other agencies will have 7-10 business days to respond from the date the Corps mails (dates) the mitigation plan.
2. All mitigation will need site protection. This can be in the form of an easement, deed restriction or similar legal instrument (See Appendix I1 and I2).
3. Force Majeure: Unexpected and disruptive forces that are beyond what would be considered as normal or natural disturbances. Typically damages caused by floods, droughts, muskrat/geese and storms are not considered disruptive forces but will be determined on a case-by-case basis by the Project Manager with concurrence with appropriate District personnel.

III. SUCCESS CRITERIA/ASSESSMENT

The Omaha District will continue to review and evaluate assessment methods that would provide the most complete data. At a bare minimum, the following information will be provided as an initial step in the assessment of each project. Choosing the appropriate method depends on use and project objective.

A. Routine Level 1 Method: Used for small, simple or non-controversial situations. Use the Floristic Quality Index (FQI); FQI score x acres (or linear feet) = FCU (functional capacity units) to get the impact score and then to get the mitigation score (the score will determine how many acres (or linear feet) to mitigate). This will also be the basis of the success criteria. (See Appendix J) This method will be applied to the buffer area separate from the wetland or stream area.

A LEVEL 2 METHOD WILL BE DEVELOPED SOON. MORE TO COME

B. Comprehensive Level 3 Method: Used for large, complex or controversial situations. Use a more detailed functional assessment such as Hydrogeomorphic Assessment Method, Wetland Rapid Assessment Procedure, Montana Department of Transportation (MDT) Montana Wetland Assessment Method, Stream Functional Assessment Methods or other District approved method.

NOTE: Some of our 6 states do not currently have access to the Floristic Quality Index's coefficient of conservatism but will implement this method as soon as they become available. For those states that cannot utilize the Routine method the following should be applied:

C. Minimum Evaluation Criteria

1. Site meets the Corps of Engineers' delineation criteria

2. Vegetation

- Native species cover and richness (i.e. species diversity) should constitute between 60-80% of the vegetation suitable for the project's water regime and site's potential. Actual percent will be determined in part by an evaluation of nearby reference (native) wetland or stream sites.
- Dominant species present ratios should be based on regional conditions and wetland or stream type.
- Invasive species cannot make up more than 10% in the third growing season after construction is finished.

Sponsor can gather data from nearby reference sites to fine tune evaluation criteria. Effort must be coordinated with and approved by the Project Manager.

3. Hydrology

- Inundated or saturated for the appropriate amount of time for the wetland type and adequate amount of hydrology present for the stream types.

See Table 5 Hydrologic Zones of 1987 Corps Manual.

4. Upland Buffer

- Native species cover and richness should constitute between 60-80% of the vegetation suitable for the region with no more than 10% invasive species in the third growing season after construction is completed.

- Dominant species present ratios should be based on regional conditions and benefit/protect the wetland or streams.
- Area must remain undisturbed to the maximum extent practicable allowing for sound management practices.

IV. RATIOS

Because each state within the Omaha District has unique ecosystems actual local ratios may be different. However, no ratio should be below the following:

Wetlands	
Restoration (re-establishment)	1.5:1
Restoration (rehabilitation)	1.5:1
Enhancement	4:1
Establishment	2:1
Protection/Maintenance	10:1

Stream/linear corridor mitigation

Feb05: Because buffer requirements are located on page 7 (3b) the ratio for stream/linear areas will be 1:1. The stream/linear portion must be at least the same length and width as the impacted stream/linear area with the buffer area usually being 25-50 feet (7.62-15.24 meter).

V. MONITORING AND REPORTING

A. Monitoring is a required component of all mitigation plans. Monitoring shall occur for a period of no less than five (5) years for emergent or riverine wetland systems or riverine systems and stream systems and ten (10) years for forested wetland systems and stream systems from the first growing season after the completion of the approved planting plan. Since the goal of mitigation is to mimic the natural system the last three years should be without active intervention (e.g. replanting vegetation or removal of excess amounts of undesirable plants, etc) or other active manipulation the MBRT sees as remediation. The monitoring results of the mitigation shall be provided to the Corps on an annual basis during the monitoring period. The monitoring report should provide sufficient written and graphic description for the Corps to evaluate the effectiveness of the mitigation effort. After the required monitoring period, the Corps will determine if, based on whether or not the site has achieved the success criteria, the monitoring reports need to continue.

B. Minimum field inspections by all parties shall be conducted on an annual basis. The Corps will coordinate with the applicant to establish a compliance-monitoring schedule. Based on success criteria progression, the Corps may require the applicant to conduct remediation.

C. The applicant will be responsible for all monitoring, management, reporting and remedial corrective measures, if needed. However, subcontractors, or public or private organizations may perform the work.

PART C: MITIGATION BANKING

The Mitigation Banking program was established to provide options for lessening the cost and regulatory burden of replacing wetlands or mitigating impacts when it is required under regulatory programs. Banking also lessens the Corps field office personnel's workload by reducing the number of compliance inspections (mitigation aggregated into large complexes that can be evaluated). Some other advantages of mitigation banking include; implementing compensation prior to impacts occurring that will reduce temporal losses of the aquatic habitat functions; reducing the regulatory processing time; bringing together proper expertise and financial resources; aiding in the integrity of the aquatic system by allowing larger complexes; and contributing to the President's goal of no-net-loss of the Nation's wetlands.

Any mitigation bank instrument that has already been approved and signed will remain intact but because of the nature of umbrella agreements discretion of the local Mitigation Banking Review Team (MBRT) will determine if modifications need to be made.

I. ROLE OF SPONSOR AND MITIGATION BANKING REVIEW TEAM (MBRT)

A. Sponsor: The bank sponsor is responsible for the overall operation and management of the bank in accordance with the terms of the banking instrument. The bank should be owned and/or under the full control of the bank sponsor. The sponsor is responsible for the preparation of the banking prospectus, instrument and monitoring reports in consultation with the MBRT. The bank sponsor shall establish in a performance bond, escrow account, irrevocable letter of credit or other financial surety, adequate funds to ensure the construction, planting, operation and monitoring (short-term and long-term), management and maintenance of the mitigation bank wetlands, streams and associated uplands and assurance of perpetuity.

B. Mitigation Banking Review Team: The MBRT will be comprised of federal, state, local and/or tribal government representatives who will oversee all phases of a mitigation bank, the chair (being the agency with regulatory authority), usually will be the Corps of Engineers. The primary role of the MBRT is to facilitate the establishment of mitigation banks through the development of the banking instrument. The MBRT will review and seek consensus on the banking instrument and final plans and is responsible for providing feedback and guidance and for determining if the bank or any supporting documentation would be appropriate for this site and type of bank. Ultimately, the MBRT will approve and activate the bank (upon the final signature from the Corps District Engineer). No agency is required to sign a banking instrument; however, in signing a bank instrument, an agency agrees to the terms of that instrument. All voting members must be from a federal, state or tribal government agency. No agency (or agency acting on behalf of another entity) that holds the role of sponsor can be on the MBRT.

II. IMPLEMENTATION PROCEDURES

It is imperative that all participants in the banking process understand how the bank is to be sited, constructed and operated. The following procedures are intended to ensure success and to minimize the potential for misunderstanding while adding predictability to the process. Parties interested in establishing a mitigation bank should follow the steps below when coordinating bank development:

1. Identify the bank sponsor. A mitigation bank may be either publicly or privately owned. Publicly owned banks are established through any municipal, county, regional, state or federal agency.
2. Contact the MBRT early in the process via the Corps of Engineers to participate in planning of the mitigation bank (i.e. site selection, development plan design, success criteria designation, monitoring and remediation plan development, etc.).
3. Identify the parties responsible for acquiring, developing, managing and monitoring the mitigation bank site, including the responsibility for accounting of bank credits.
4. Included with the formal 'notice of intent' should be the following:
 - a. Department of the Army permit application to conduct any work within existing waters of the United States that is necessary to establish the bank. If a Department of the Army permit is not needed, a permit application is not required.
 - b. A plan that details the goals, objectives, and success criteria for creating wetlands or streams, including wetland and stream types and their respective acreage and linear feet.
 - c. Provisions that address long-term management.
5. See Page B2 for Evaluation Protocol.

III. COMPONENTS

It is intended that mitigation banks are to be used primarily to mitigate wetland or stream impacts associated with permitted projects.

Projects initiated independent of a bank instrument (or the banking process) will not be considered. Notification to the Corps of intent to use a site for mitigation banking purposes is required prior to the initiation of physical work to create the bank. No work completed prior to an approved banking instrument will be accepted as credits until the instrument is signed. The MBRT will provide general assistance to potential bank sponsors in developing their specific mitigation bank instrument provided the bank sponsors follow the guidelines developed in these procedures.

A. Prospectus. (Official 'Notice of Intent' to the Corps and the MBRT)

Bank sponsors are encouraged to discuss their proposal with the appropriate Corps of Engineers' office prior to a formal request to establish a mitigation bank (pre-application coordination). Prospective bank sponsors will first submit a prospectus to the Corps of Engineers who will then initiate the official planning and review process by the appropriate agencies. The prospectus will include sufficient information concerning the objectives for the bank and how it will be established, operated, maintained and protected to allow the MBRT to provide feedback and guidance.

In all cases of proposed banking, the Corps will issue a public notice, including the prospectus, describing the project. The public comment period for submittal of relevant comments on the bank prospectus will be a minimum of 21 days. If a Department of the Army permit is needed in order to construct, restore, or enhance wetlands/streams on the bank site, the Corps will follow normal permit processing procedures.

The prospectus will eventually become the basis of the mitigation bank instrument and should contain:

1. The bank size (location and boundaries with legal description of the property) of wetlands and/or other aquatic resources proposed for inclusion of the bank (baseline conditions).
2. Delineation of any wetlands/streams (include class and water regime) or other jurisdictional Waters of the US that may exist at the proposed bank location;
3. The type of real estate interest in bank property;
4. The type of bank (i.e., single client, joint project, commercial, etc.);
5. The goals and objectives of the bank;
6. Credit production:
 - a. The method of credit production (i.e., restoration, establishment, enhancement, Protection/Maintenance),
 - b. Description of the assessment methodology used for credit certification (must be consistent with the project impact assessment methodology),
 - c. The number of proposed credits by each method, and the rationale for crediting (accounting procedures with ratios)
 - d. Performance standards for determining credit availability and bank success;
7. A statement as to compliance with this document;
8. A description of general site plan showing the location of all features such as existing and proposed wetland/stream/upland habitats, roads, trails, structures, utilities, and any other existing or proposed site improvements;
9. An outline of management and maintenance responsibilities;
10. A preliminary construction plan and schedule of completion, preliminary planting plan, preliminary administrative, management, monitoring, and financial plans, and;
11. Documentation of "Incorporation" for the mitigation bank, if appropriate;
12. Proposed Geographical Service Areas using the 8-digit Hydrologic Unit Classification (HUC) or with ecological justification for larger service area.
13. Documentation of the existence of water rights (in appropriate states).
 - a. The water rights that are to supply water to the wetland bank are physically sufficient to provide for the sustenance of the wetland.
 - b. That the water rights are legally available to supply water to the wetland bank
 - c. That the use of the water rights is not subject to challenge by the government or private interests.
14. Provisions for long-term management and maintenance (if known).

B. Instrument.

1. A formal, written banking instrument, developed in cooperation with the MBRT must support each mitigation bank. This instrument should use as a template, the draft banking instrument and contain, at a minimum, the information contained in the basic outline of a banking instrument (See Appendix F). Depending upon the nature of the bank, a permit for wetland or stream alteration may be required as a condition of the banking instrument.

2. Mitigation banks generally must be functioning consistently with the success criteria developed for each particular bank, prior to the withdrawal of credits. In certain instances, limited withdrawal of credits may be allowed prior to demonstrated functional success. All of the following requirements must be satisfied prior to pre-function early credit withdrawal:

- a. The banking instrument and final mitigation plans have been approved;
- b. The bank sponsor has performed a functional assessment on the bank site and demonstrated to the MBRT that the site has a high probability for functional success (When using acres a less intensive assessment may be used at the discretion of the MBRT);
- c. The bank site has been secured; and
- d. The appropriate financial and legal assurances have been established.

3. In-kind compensation is required and preferable to out-of-kind compensation unless the proposed compensation (out-of-kind) is generally regarded to have a more ecological benefit to the overall watershed, as determined by the MBRT and/or the Corps. Decisions regarding out-of-kind mitigation are typically made on a case-by-case basis.

4. Based on a functional assessment for both the impact site and the mitigation site, the focus is on providing the replacement of the primary functions, but attention should include all possible improvements to provide the widest range of functions available. Mitigation bank credits used for a particular project must provide maximum practicable replacement of the (otherwise uncompensated) functions lost as a result of the activity (i.e., no overall net loss of functions).

5. Where impacts from an activity will be offset by reliance in whole or in part on a mitigation bank, the permit or certification shall include purchase of bank credits as a condition of the Section 404 permit or Swampbuster provision. The bank must also have credits available.

6. Site-specific banking instruments must specify that the bank sponsor or long term manager of the bank site is responsible for the long-term success, perpetual protection and/or passive management of the bank, and for providing remedial and contingency actions if the bank fails. Also, site-specific banking instruments must authorize Right-of-Entry to any representative of the MBRT.

7. After-the-fact projects that cannot be mitigated on-site can be debited at higher ratios than pre-approved projects when there is difficulty in determining the impacts of the affected wetland/stream. The temporal loss of function may justify the need for requiring higher compensation ratios.

8. The Omaha District will continue to review and evaluate assessment methods that would provide the most complete data. An appropriate functional assessment methodology acceptable to all signatories should be used to assess wetland and/or other aquatic resource to quantify the amount of available credits. Generally, photo documentation, plant survival, channel stability (for stream mitigation), and wetland response should be monitored based on success criteria. At a bare minimum, the following data will be provided to assess each project.

a. Routine Level 1 Method: Used for small, simple or non-controversial situations. Use the Floristic Quality Index (FQI) - FQI score x acres (or linear feet) to get the impact score and then to get the mitigation score (the score will determine how many acres (or linear feet) to mitigate). This will also assist the set up of the success criteria. (See Appendix J) This method will be applied to the buffer area separate from the wetland or stream area.

A LEVEL 2 METHOD WILL BE DEVELOPED SOON. MORE TO COME

b. Comprehensive Level 3 Method: Used for large, complex or controversial situations. Use a more detailed functional assessment such as Hydrogeomorphic Assessment Method, Wetland Rapid Assessment Procedure, MDT's Montana Wetland Assessment Method, Stream functional assessment methods, or other District approved method.

NOTE: Some of our 6 states do not currently have access to the Floristic Quality Index's coefficient of conservatism but will implement this method as soon as they become available. The following criteria should be applied on a project-by-project basis:

Minimum Evaluation Criteria (in the absence of functional assessment)

- a. Site meets Corps of Engineer's delineation criteria
- b. Vegetation
 - Native species cover and richness should constitute >60% (actual regional percentages may vary between 60% and 100%) of the vegetation suitable for the project's water regime and site's potential.
 - Dominant species percent ratios should be based on regional conditions and wetland or stream type.
 - Invasive species (e.g. cattails) cannot make up more than 10% in the third growing season after construction is finished.
Sponsor can gather data from nearby reference sites to fine tune evaluation criteria. Effort must be coordinated with and approved by the MBRT¹.
- c. Hydrology
 - Inundated or saturated for the appropriate amount of time for the wetland type, and adequate amount of hydrology present for the stream type. See Table 5 Hydrologic Zones of 1987 Corps Manual.
- d. Upland Buffer
 - Native species cover and richness should constitute between 60-80% of the vegetation suitable for the region with no more than 10% invasive species in the third growing season after construction is complete.
 - Dominant species present ratios should be based on regional conditions and benefit/protect the wetland or stream.

¹ Approved reference site results should be filed with the District Wetland Mitigation Banking Coordinator.

- Area must remain undisturbed to the extent practicable, consistent with sound management practices. Must be approved through MBRT.

9. The Signature page must contain the following information: (See Appendix H)

- a. Bank Name
- b. Who/Agencies that are signing the agreement
- c. The objective of the bank
- d. Geographical Service area
- e. Signatures
 - i. Sponsor and/or agent for sponsor
 - ii. Each cooperating agency
 - iii. Corps of Engineers (District Engineer)

C. Monitoring and Reporting: (See Appendix G)

1. Monitoring is a required component of all mitigation plans. Monitoring shall occur for a period of no less than five (5) years for emergent wetland systems or riverine systems and ten (10) years for forested wetland or riverine systems from the first growing season after the completion of the approved planting plan. The last three (3) years should be without intervention in the form of removal of undesirable vegetation or replanting of desirable vegetation. Monitoring will document the progression of success of the mitigation work or any problems or failures that need to be corrected. The monitoring results of the mitigation shall be provided to the Corps on an annual basis during the monitoring period. The monitoring report should provide sufficient written and graphic, and photogenic description for the Corps to evaluate the effectiveness of the mitigation effort. Minimal information to be collected should be the same as required in the banking instrument. After the required monitoring period, the Corps (with consultation with other members of the MBRT) will determine if, based on whether or not the site has achieved the success criteria, the monitoring reports need to continue.

2. Minimum field inspections by all parties shall be conducted on an annual basis. The MBRT will coordinate with the bank sponsor to establish a compliance-monitoring schedule that assures that all mitigation bank sites are inspected for compliance with the approved Bank Instrument. Based on information contained in the monitoring reports and/or agency site inspections, the MBRT may require the bank sponsor to implement a MBRT approved remediation plan.

3. The mitigation bank sponsor shall be responsible for all monitoring, management, reporting and remedial corrective measures, if needed. However, bank employees, subcontractors, or public or private organizations may perform the work.

D. Bank Operational Life

The operational life of a bank shall consist of the period during which the terms and conditions of the banking instrument are in effect. With the exception of arrangements for

long-term management and protection of the site in perpetuity, the operational life (at a minimum of five (5) years) of a mitigation bank terminates at the point when:

1. Wetland or stream compensatory mitigation credits have been exhausted or banking activity is voluntarily terminated with written notice from the bank sponsor to the Corps of Engineers and
2. The Corps of Engineers (with consultation with the rest of the MBRT) has determined that the fully debited bank is functionally mature and/or self-sustaining to the degree specified in the banking instrument and associated documents, including the performance standards (success criteria) outlined in this agreement.

E. Protection / Long-Term Management (For templates see Appendix I)

The wetlands/streams and/or other aquatic resources in a mitigation bank will be protected in perpetuity with the appropriate real estate arrangements (i.e., conservation easements, transfer of title to Federal or State resource agency, state water rights holdings, local government or non-profit conservation organization). Such arrangements should effectively restrict harmful activities that might otherwise jeopardize the purpose of the bank (See Part B.I. - Protection should extend for the duration of project impacts for which the bank is being used to provide compensation).

Instances in which the sponsor transfers long-term operation and maintenance of debited wetlands or streams to another entity should be accomplished by transfer of title or by development of a lease agreement. Transfer of title may include a reversionary clause, which will return the title to the original owner in the event lands are not managed for their intended use. Restrictive covenants and conservation easements also affect land management. The Corps of Engineers and any other signatories to the original banking instrument must approve any transfer. A transfer must honor all conditions in the instrument.

IV. CREDIT AND ACCOUNTING

NOTE: Functional units based on an approved functional assessment such as HGM, HEP or similar method will be required for all future banks.

A. Credits: Credits from mitigation banks may also be used to compensate for environmental impacts authorized under other programs, such as state or local wetland watershed, or stream programs. In no case may the same credits be used to compensate for more than one activity. Once credits have been used, whether for wetland mitigation or another approved program (i.e., endangered species habitat), those credits will be considered used and can not be used again (i.e., 15 credit bank can not sell 15 credits towards wetland/stream mitigation and 15 credits to endangered species habitat (ESH). The bank can sell 5 credits to wetland/stream mitigation and 10 credits to ESH or similar as long as the number of credits truly sold does not exceed the number of available credits). However, if mitigation for a specific project is required under both Clean Water Act and another program, such as Endangered Species Act, for impacts to the same wetland or stream habitat, the credits can count towards mitigation under both programs.

B. Credit Certification. Bank sponsors may request mitigation bank credit certification at any time after a minimum of three (3) years data collection for emergent wetland/stream and seven (7) years for forested wetland/stream systems. Based on the bank sponsors' method of assessment, the MBRT will establish a process or formula (debiting plan) for translating compensation requirements into debits (this will be in the signed instrument).

C. Minimum threshold credit ratios: Because each state within the Omaha District has unique ecosystems actual local ratios may be different. However, no ratio should be below the following:

Wetlands

Ratio A		Ratio B
1:1	Restoration (re-establishment)	1.5:1
1:1	Restoration (rehabilitation)	1.5:1
3:1	Enhancement	4:1
1:1	Establishment	2:1
10:1	Protection/Maintenance	10:1
4:1	Buffer	4:1

Stream/linear corridor mitigation banks (500 feet equals one credit)

1:1	Restoration (re-establishment/day-lighting)	1.5:1
1:1	Restoration (rehabilitation)	1.5:1
3:1	Enhancement	4:1
1:1	Establishment	2:1
10:1	Protection/Maintenance	10:1
4:1	Buffer *	4:1

* Several studies (see applicable literature appendix) have suggested that riparian buffers are very important for functions such as water quality protection, stream stabilization and riparian habitat. Therefore it will be offered at the discretion of the MBRT that banks may have the opportunity to exchange or reduce their ratio for having a more ecologically stable buffer. For every 10 meters (32.8 feet) of appropriate buffer one (1) ratio point can be reduced from the buffer ratio down to the ratio given to the remainder of the bank. (i.e. If the restoration ratio is 1.5:1 then a sponsor could only be able to request an exchange or reduction of 2.5 points in exchange for an additional 25 meters of buffer. Then for the entire bank the ratio to determine credits would be 1.5:1).

** Within this ratio the stream/linear portion must be at least the same length and width as the impacted stream/linear area with the remaining portion of the ratio for riparian corridor.

Typically ratio determinations should be based on the following conditions:

Condition 1 (Ratio A)

- The Bank has met its success criteria (see Part B II for minimum evaluation criteria).
- The bank, in its entirety, can demonstrate overall watershed benefits.

Condition 2 (Ratio B) (for pre-credits, out-of-kind or approved out of primary service area. Ratio is slightly higher to account for temporal loss except for Protection/Maintenance and buffer ratios).

- Bank has not met success criteria but MBRT has approved the release of pre-credits (no more than 30% of the total bank).
- Primary function of the bank's wetland is less or significantly different than impacted wetlands (i.e. out-of-kind or diminished functional capacity)

Example: **Restoration** (From Nebraska's draft guidance)

Status	Ratio	Released	Cumulative
Instrument signed	1.5:1	5%	5%
Construction completed	1.5:1	10%	15%
Site meets 1987 COE manual 3 criteria	1:1	15%	30%
Ecologically sound -certified	1:1	70%	100%

NOTE: Since protection (Protection/Maintenance) already meets the 1987 manual and would be considered ecologically sound (i.e. certified) it does not apply to the 30% pre-credit cap.

V. MITIGATION BANK CREDIT SALES

Upon authorization of the mitigation bank, through a Department of the Army permit or interagency agreement, the sale of wetland or stream credits and the establishment or restoration of wetlands or stream and buffers may commence. The credits may be sold for mitigation purposes with the following conditions:

1. The Corps of Engineers (with consultation from the MBRT) has sole authority to determine the number of credits available for withdrawal from the mitigation bank.

2. Pre-credits may be sold provided that adequate funds, as approved by the Corps of Engineers, are established through an escrow account, performance bond, irrevocable letter of credit or other financial surety for the generation of credits and long-term maintenance of the required bank site. No more than 30% of the bank may be sold as Pre-credits.

Protection/Maintenance credits, when approved, are considered certified once the instrument and any other appropriate documents are signed.

3. No Department of the Army permits will be granted to applicants proposing to use a mitigation bank unless credits are available in the bank, as determined by the Corps, except where approval by MBRT has been given to the bank sponsor for pre-credits as provided in this section (Mitigation Bank Credit Sales). Decisions to allow credits to be withdrawn from a mitigation bank will be made on a case-by-case basis with the focus of replacement of loss functions. The initial physical and biological improvements at the bank site (including, but not limited to, grading, planting, and restoration of wetland or stream hydrology) must be completed no later than the end of the first full growing season following the initial debiting of the bank.

4. The bank sponsor shall establish and maintain a ledger of all available credits, whether purchased or not, and of all credits sold or otherwise debited. The ledger shall be made available to the MBRT upon request. In addition, the bank sponsor must provide the Corps an updated ledger containing a list of all transactions at the conclusion of every credit sale.

VI. TRANSFER BANK ASSESTS

A. A sponsor may sell or transfer mitigation bank assets to another public or private entity, or an individual. All purchases or transfers are subject to Corps approval when such bank assets serve as compensation for wetland or stream losses authorized under Section 404. Transfers generally are subject to approved operational banking guidelines and all conditions of any existing agreement. The legal instrument for transferring bank assets must contain either a positive or negative statement relative to credit transfer.

B. Transfer or sale of the mitigation bank may occur to a party willing and financially able to abide by the terms and conditions of the approval agreement entered into by the Corps of Engineers (with consultation from the MBRT) and the bank owner. If only the bank sponsor is changing, no additional public notice is required, but if the change involves the sponsor and minor changes, then a public notice will be required. Major changes will require a new bank instrument to be developed and a new 30-day Public Notice.

VII. DISPUTE RESOLUTION

A. The MBRT will work to reach consensus on its actions in accordance with this guidance. The Corps is responsible for making final decisions on a project-specific basis regarding the use of a mitigation bank for purposes of Section 404/10 and FSA, respectively. If at any time a MBRT member considers that a particular decision raises concern and a consensus cannot be met then that member may request in writing that the issue be reviewed by the Corps of Engineers' District Mitigation Banking Coordinator (DMBC).

B. If a sponsor wants to appeal a MBRT decision, they may also do so in writing. A description of the situation and decision should be submitted to the Corps of Engineers' DMBC. The DMBC will decide if meetings (with the MBRT and/or sponsor) need to be held to further investigate the appeal, otherwise determination will be conducted through correspondence between appropriate parties. A decision can be reevaluated if there appears to be any bias or pressure from any one of the members of the MBRT. If the MBRT decision appears to be logical and based on best available scientific knowledge, the decision will stand. Once a determination has been made, a written response will be provided to the sponsor and the MBRT.

C. In either the case of the MBRT member or sponsor, a final dispute may be submitted to the Corps' District Engineers. The DMBC's recommendations will be included with all disputes reviewed by the District Engineer. Within 30 days, the Corps District Engineer or NRCS State Conservationist (as appropriate) will consult with the notifying agencies and will resolve the issue.

PART D: APPLICABLE LITERATURE

Allen, H.H. and J.R. Leach. 1997. Bioengineering for Streambank Erosion Control. EIRP Technical Report EL-97-8, US Army Engineer Waterways Experiment Station, Vicksburg, MS.

Apfelbaum, Stephen I. and Charles E. Sams. 1987. Ecology and Control of Reed Canary Grass. Natural Areas Journal. 7(2): 69-74.

D'Avanzo, Charlene. 1990. Long-term Evaluation of Wetland Creation Projects. Wetland Creation and Restoration. EPA 600/3-89/038b. 9pg.

Federal Register. 1995. Federal Guidance for the Establishment, Use and Operation of Mitigation Banks. Federal Register 60(228) 28 November.

Fischer, Richard A. and J. Craig Fischenich. 2000. Design Recommendations for Riparian Corridors and Vegetated Buffer Strips. EMRRP Technical Notes Collection (ERDC TN-EMRRP-SR-24), US Army Engineer Research and Development Center, Vicksburg, MS.

Good, Ralph E, Dennis F. Whigham, and Robert L. Simpson. 1989. Freshwater Wetlands. Academic Press, Inc. 378 pages.

Howorth, Laura A. 1991. Highway Construction and Wetland Loss: Mitigation Banking Programs in the Southeastern United States. The Environmental Professional (13) 139-144.

Kentula, Mary E., Robert P. Brooks, Stephanie E. Gwin, Cindy C. Holland, Arthur D. Sherman, and Jean C. Sifneos. 1992. An Approach to Improving Decision Making in Wetland Restoration and Creation. Edited by A.J. Hairston. US Environmental Protection Agency, Environmental Research Laboratory, Corvallis, OR. EPA/600/R-92/150. Pp 151.

LeDesma, Michael G. 1994. A Sound of Thunder: Problems and Prospects in Wetland Mitigation Banking. Columbia Journal of Environmental Law 19:497-519.

Lewis, Roy R. 1990. Wetland Restoration/Creation/Enhancement Terminology: Suggestions for Standardization. Wetland Creation and Restoration. EPA 600/3-89/038b. 8pg.

Mattingly, Rosanna L. 1994. Mitigating Losses of Wetland Ecosystems: A Context for Evaluation. The American Biology Teacher. 56 (4): 206-214.

Munro, John W. 1992. Wetland Restoration in the Mitigation Context. Restoration and Management Notes 9:2:80-86.

Rabbe, Michael. Draft SOP: The Establishment and Operation of Wetland Mitigation Banks in Nebraska.

Richardson, Curtis J. 1994. Ecological Functions and Human Values in Wetlands: a Framework for Assessing Forestry Impacts. Wetlands 14(1):1-9.

Sokolove Robert D. and Pamela D. Huang. 1992. Privatization of Wetland Mitigation Banking. NR&E Summer 5pp.

Streever, Bill. 1999. Performance Standards for Wetland Creation and Restoration Under Section 404. National Wetlands Newsletter. May-July pg 10-13.

Streever, William J., David L. Evans, Chris M. Keenan, and Thomas L. Crisman. Chironomidae (Diptera) and Vegetation in a Created Wetland and Implications of Sampling. Wetlands 15(3) 285-289.

Streever, W.J. and K.M. Portier. 1994. A Computer Program To Assist With Sampling Design in the Comparison of Natural and Constructed Wetlands. Wetlands 14(3) 199-205.

Thom, Ronald M. and Katharine F. Wellman. 1996. Planning Aquatic Ecosystems Restoration Monitoring Programs. IWR Report 96-R-23.

Van der Valk, Arnold. 1989. Northern Prairie Wetlands. Iowa State Press, Ames, Iowa. 400pages.

Waterways Experiment Station. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1. Final report January 1987. 169pp.

Wetland Research Program. 1999. Examples of Performance Standards for Wetland Creation and Restoration in Section 404 Permits and an Approach to Developing Performance Standards. Technical Note WG-RS-3.3. pp 14.

WATERWAYS EXPERIMENTAL STATION TECHNICAL NOTES

Engineer Research and Development Center (ERDC) and Environmental Laboratory (EL)

Fischenich, J. Craig and Hollis Allen. March 2000. Stream Management. Water Operations Technical Support Program. ERDC/EL SR-W-00-1.

Fischer, R. A. May 2002. Technical and Scientific Considerations for Upland and Riparian Buffer Strips in the Section 404 Permit Process. ERDC TN-WRAP-01-06.

Fischer, R.A., C.O. Martin, J.T. Ratti, and J. Guidice. January 2001. Riparian Terminology: Confusion and Clarification. ERDC TN-EMRRP-SR-25.

Fischer, Richard A and J. Craig Fischenich. April 2000. Design Recommendations for Riparian Corridors and Vegetated Buffer Strips. ERDC TN EMRRP-SR-24.

Fischer, R. A. January 2000. Width of Riparian Zones for Birds. ERDC/EL TN-EMRRP-SI-09.

Nine reports published through Institute for Water Resources:

1. Wetland Mitigation Banking Concepts, IWR Report 92-WMB-1
2. Wetlands Mitigation Banking: Resource Document, IWR Report 94-WMB-2
3. Expanding Opportunities for Successful Wetland Mitigation: The Private Credit Market Alternative, IWR Report 94-WMB-3
4. First Phase Report, IWR Report 94-WMB-4

5. Examination of Wetland Programs: Opportunities for Compensatory Mitigation, IWR Report 94-WMB-5
6. Wetland Mitigation Banking, IWR Report 94-WMB-6
7. Commercial Wetland Mitigation Credit Markets: Theory and Practice, IWR Report 95-WMB-7
8. Watershed-based Wetlands Planning: A Case Study Report, IWR Report 95-WMB-8
9. Commercial Wetland Mitigation Credit Ventures: 1995 National Survey, IWR Report 96-WMB-9